COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Southwest Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Strongwell Corporation - Highlands Division
Abingdon, Washington County, Virginia
Permit No. SWRO11207

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Strongwell Corporation has applied for renewal of the Title V Operating Permit for its Highlands Division facility in Abingdon, Virginia. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact:_____ Date: June 23, 2005

Air Permit Manager:_____ Date: June 23, 2005

Deputy Regional Director:_____ Date: June 23, 2005

FACILITY INFORMATION

Permittee
Strongwell Corporation
P. O. Box 580
Bristol, Virginia 24203-0580

Facility
Strongwell Corporation - Highlands Division
26770 Newbanks Road
Abingdon, Virginia 24210

AFS ID No. 51-191-00165

SOURCE DESCRIPTION

SIC Code: 3089 - Manufacture of plastic products, not elsewhere classified

Strongwell Corporation manufactures fiberglass reinforced plastics using pultrusion and casting processes at their Highlands Division facility. The pultrusion process involves drawing reinforced fibers through a liquid styrene or phenolic resin mixture. The saturated fibers are then pulled through forming guides and into a heated die. The resin chemically reacts in the die creating a solid, hard finished part as the material exits. The profile produced is then cut to length. Emissions of volatile organic compounds (VOC) and hazardous air pollutants (HAP) result from evaporation of monomers during the pultrusion process. Emissions of particulate matter (PM) result from cutting the profile to length.

The casting process involves pouring a mixture of unsaturated polyester vapor-suppressed resin, sand, gravel, calcium carbonate and small amounts of catalyst and promoter into a mold containing fiberglass fabric reinforcement to produce a polymer concrete product. Emissions of VOC and HAP result from evaporation of monomers during the casting process. Emissions of PM result from aggregate handling.

The facility is a Title V major source of HAP (styrene and phenol) and VOC. The facility is located in an attainment area for all pollutants, and is a Prevention of Significant Deterioration (PSD) minor source. The facility is currently permitted under a minor New Source Review (NSR) permit issued on December 10, 2004, and a Title V operating permit with an expiration date of June 23, 2005.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was conducted on April 16, 2003. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Casting Equipment							
AS-1 through AS-5	VS-AS-1 through VS-AS-5	Aggregate storage, 5 silos	13' diameter x 35' high, each	CPE Filters, 48-CBF-025-C	AF-1 through AF-5	Particulate	December 10, 2004
BT-1 through BT-3	-----	Resin blending, 3 tanks	1,000 gallon capacity, each	-----	-----	-----	December 10, 2004
MC-1	VS-WC-3	Mixing and casting area consisting of 10 stations with various molds and hand tools	4,325 lb/hr resin mixture	To be determined	DC-WC-3	Particulate	December 10, 2004
MC-2	VS-WC-4	Mixing and casting area consisting of 20 stations with various molds and hand tools	8,650 lb/hr resin mixture	To be determined	DC-WC-4	Particulate	December 10, 2004
Pultrusion Equipment							
PM-1 through PM-5 and PM-9	DC-1	Strongwell, 4 cavity model; produces fiber reinforced plastic products, 6 machines	300 lb/hr, each	Farr, size 20d cartridge dust collector	DC-WC-1	Particulate	December 10, 2004
PM-10	DC-2	Strongwell, 4 cavity model; produces fiber reinforced plastic products, 1 machine	300 lb/hr	Farr, size 20d cartridge dust collector	DC-WC-2	Particulate	December 10, 2004

EMISSIONS INVENTORY

Actual emission data is from the 2003 annual emission update. A copy of the annual emission update is attached. Emissions are summarized in the following tables:

2003 Actual Emissions

	2003 Criteria Pollutant Emission in Tons/Year				
Emission Unit	VOC	CO	SO_2	PM_{10}	NO_x
PM-1 through PM-5, PM-9 and PM-10	29.88	---	---	0.0275	---
SH-1 through SH-32, HC-1 through HC-3	---	---	---	---	0.12
Total	29.88	---	---	0.0275	0.12

2003 Facility Hazardous Air Pollutant Emissions

Pollutant	2003 Hazardous Air Pollutant Emissions
Styrene	17.58 tons/yr

EMISSION UNIT APPLICABLE REQUIREMENTS – Casting Equipment, MC-1, MC-2, and AS-1 through AS-5

Limitations

The following requirements are from the minor NSR Permit issued on December 10, 2004:

Condition 3: Particulate emissions from the aggregate silo vents shall be controlled by fabric filtration.

Condition 4: Particulate emissions from the transfer of material into the aggregate storage silos shall be controlled by wet suppression or equivalent.

Condition 6: The approved mold release agent for use in the cast polymer concrete operations is W.N. Shaw & Co., L-306 release blend, or equivalent.

Condition 7: Total consumption of all aggregate materials in the cast polymer concrete

operations shall not exceed a total of 47,570 tons per year.

Condition 8: Total consumption of styrene resin mix in the cast polymer concrete operations shall not exceed a total of 5,913 tons per year.

Condition 10: Total consumption of mold release agent in the cast polymer concrete operations shall not exceed a total of 63.07 tons per year.

Condition 12: Emissions from the operation of the cast polymer concrete manufacturing equipment shall not exceed the limits specified below:

VOC	24.07 lb/hr	93.14 tons/yr

Condition 14: Visible emissions from each fabric filter exhaust shall not exceed 5 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).

Monitoring

The monitoring and recordkeeping requirements in Condition 16 of the NSR permit have been modified to meet Part 70 requirements.

Use of fabric filtration to control particulate emissions from the aggregate storage silos will be monitored by visible emission observations and maintaining records of air pollution control device operating procedures and maintenance based on the manufacturer's recommendations, at minimum.

The visible emission limitation will be monitored by visible emission observations. Each fabric filtration exhaust will be visually observed for a brief period of time at least once each week while the aggregate storage silo is being loaded to determine if the unit has visible emissions (does not include condensed water vapor/steam). If visible emissions are observed during these weekly observations, then visible emissions evaluations in accordance with 40 CFR 60, Appendix A, Method 9 will be conducted on the unit with visible emissions. A Method 9 evaluation will not be required if the visible emission condition is corrected as expeditiously as practicable such that no visible emissions are present and, the visible emissions condition, cause and corrective measures taken are recorded. A record of each visible emissions observation will be maintained. The record will include, at a minimum, the date, time, name of the emission unit, the applicable emissions requirement, the results of the observation, and the name of the observer.

The hourly emission limit established for VOC in Condition 12 of the NSR permit is based on total maximum capacity of each casting area. Therefore, if the casting operation is operated at capacity, or below, there should be no violation of the hourly VOC emission limit. Calculations have been included in Attachment A to demonstrate how the limits were obtained.

The annual emission limit established for VOC in Condition 12 of the NSR permit is based on the resin mix throughput limit for the cast polymer concrete operations contained in Conditions 8, and the mold release agent throughput limit in Condition 10, of the NSR permit. Resin mix and mold release throughputs are the factors that determine VOC emission rates. Therefore, as long as the throughput limits are not violated, the annual VOC emission limit should not be violated. Recordkeeping demonstrating compliance with the annual throughput limits can be used to demonstrate compliance with the annual VOC emission limit, therefore throughput limits satisfy the periodic monitoring requirement. Calculations have been included in Attachment A to demonstrate how the limits were obtained.

VOC emissions will be calculated using DEQ approved emission factors supplied by the permittee as shown below:

Casting	0.0113 pounds VOC/pound of styrene resin

Recordkeeping

The permittee shall maintain the following records:

Annual consumption of aggregate material in the cast polymer concrete operations calculated monthly as the sum of each consecutive 12-month period.

Annual consumption of styrene resin mix in the cast polymer concrete operations calculated monthly as the sum of each consecutive 12-month period.

Annual consumption of mold release agent in the cast polymer concrete operations calculated monthly as the sum of each consecutive 12-month period.

All visible emission checks and evaluations.

Air pollution control device operator training, operating procedures and maintenance based on the manufacturer's recommendations, at minimum.

Emission factors used to calculate emissions from the casting equipment.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The following requirement is from the minor NSR permit issued on December 10, 2004:

> Condition 17: The permittee shall furnish written notification to the Director, Southwest Regional Office regarding the actual date on which construction of the cast polymer concrete manufacturing equipment commenced within 30 days after such date, and; the actual start-up dates of the cast polymer concrete manufacturing equipment within 15 days after such date.

EMISSION UNIT APPLICABLE REQUIREMENTS - Pultrusion Equipment, PM-1 through PM-5, PM-9 and PM-10

Limitations

The following requirements are from the minor NSR permit issued on December 10, 2004:

> Condition 5: Particulate emissions from the pultrusion machines shall be controlled by fabric or paper filters.

> Condition 11: The pultrusion operations shall process no more than the following quantities of the listed materials or their equivalents:

	lb/hr	t/yr
Esperox 570P	8.4	25.8
t-Butyl Perbenzoate	2.10	6.5
Silquest A-174	10.50	32.3
12% Cobalt	0.63	0.07
Lupersol DDM-9	0.56	0.1
Dimethylaniline	0.04	0.01
PM Blend	80.0	50.0
1124 Solvent	20.0	2.5
M-1526 Inhibitor	2.0	1.3

> Condition 13: Emissions from the operation and clean-up of the pultrusion machines shall not exceed the limits specified below:

VOC	47.43	lb/hr	82.14	tons/yr

> Condition 14: Visible emissions from each dust collector exhaust shall not exceed 5 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).

Monitoring

The monitoring and recordkeeping requirements in Condition 16 of the NSR permit have been

modified to meet Part 70 requirements.

Use of fabric or paper filters to control particulate emissions from the pultrusion machines will be monitored by visible emission observations and maintaining records of air pollution control device operating procedures and maintenance based on the manufacturer's recommendations, at minimum.

Visible emission limitations will be monitored by visible emission observations. Each dust collector exhaust will be visually observed for a brief period of time at least once each day while the unit is in operation to determine if the unit has visible emissions (does not include condensed water vapor/steam). If visible emissions are observed during these daily observations, then visible emissions evaluations in accordance with 40 CFR 60, Appendix A, Method 9 will be conducted on the unit with visible emissions. A Method 9 evaluation will not be required if the visible emission condition is corrected as expeditiously as practicable such that no visible emissions are present and, the visible emissions condition, cause and corrective measures taken are recorded. A record of each visible emissions observation will be maintained. The record will include, at a minimum, the date, time, name of the emission unit, the applicable emissions requirement, the results of the observation, and the name of the observer.

The hourly emission limit established for VOC in Condition 13 of the NSR permit is based on total maximum capacity of the pultrusion machines and resin mix component throughput limits in Condition 11, of the NSR permit. If the pultrusion machines are operated at capacity, or below, and resin mix component throughput limits are not violated, there should not be a violation of the hourly VOC emission limit. Calculations demonstrating compliance have been included in Attachment A. Recordkeeping demonstrating compliance with the throughput limits can be used to demonstrate compliance with the VOC hourly emission limit; therefore, throughput limits satisfy the periodic monitoring requirement.

The annual emission limit established for VOC in Condition 13 of the NSR permit is based on resin mix and resin mix component throughput limits (excluding cast polymer concrete operations) contained in Conditions 8, 9, and 11, of the NSR permit. Resin mix and mix component throughputs are the factors that determine the VOC emission rates. Therefore, as long as the annual throughput limits are not violated, the VOC annual emission limit should not be violated. Calculations demonstrating compliance have been included in Attachment A. Recordkeeping demonstrating compliance with the throughput limits can be used to demonstrate compliance with the VOC annual emission limit; therefore, throughput limits satisfy the periodic monitoring requirement.

VOC emissions will be calculated using DEQ approved emission factors supplied by the permittee as shown below:

Pultrusion	0.0104 pounds VOC/pound of styrene resin
	0.00243 pounds VOC/pound of phenolic resin

Recordkeeping

The permittee shall maintain the following records:

Annual consumption of styrene resin mix in the pultrusion machines, calculated monthly as the sum of each consecutive 12-month period.

Monthly and annual hours of operation of the pultrusion operations. Annual hours of operation will be calculated monthly as the sum of each consecutive 12-month period.

Monthly and annual consumption of resin mix materials in the pultrusion operations including additives, catalysts and solvents. Annual amounts will be calculated monthly as the sum of each consecutive 12-month period.

Hourly consumption of resin mix materials in the pultrusion operations. Hourly amounts will be calculated by dividing monthly consumption of resin mix materials in the pultrusion operations by monthly hours of operation of the pultrusion operations.

All visible emission checks and evaluations.

Air pollution control device operator training, operating procedures and maintenance based on the manufacturer's recommendations, at minimum.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit, if necessary, to determine compliance with an emission limit or standard.

Reporting

There are no specific reporting requirements included in the permit for the pultrusion operations.

EMISSION UNIT APPLICABLE REQUIREMENTS - Facility-Wide Requirements

Limitations

The following requirements are from the minor NSR permit issued on December 10, 2004:

Condition 8: The facility, excluding the cast polymer concrete operations, shall process no more than 6,450 tons/yr of styrene resin mix, calculated monthly as the sum of each consecutive 12-month period.

Condition 9: The consumption of phenolic resin mix shall not exceed 600 tons/yr, calculated as the sum of each consecutive 12-month period.

Monitoring and Recordkeeping

The monitoring and recordkeeping requirements in Condition 16 of the NSR permit have been modified to meet Part 70 requirements. The permittee shall maintain records of annual consumption of phenolic resin mix calculated monthly as the sum of each consecutive 12-month period.

The pultrusion equipment section requires recordkeeping of annual consumption of styrene resin in the pultrusion machines. This directly reflects resin consumption in the facility, excluding the casting operations. Requiring records of both styrene resin consumption in the facility excluding casting operations, and styrene resin consumption in the pultrusion machines is redundant. Therefore, the permittee is only required to maintain records of annual consumption of styrene resin in the pultrusion machines as reflected in Condition 16 of the NSR permit.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

There are no specific facility-wide reporting requirements included in the permit.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 3-2001".

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on General Condition F.

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Code section has specific requirements only enforceable by the State:

> 9 VAC 5-50-310, Standards of Performance for Odorous Emissions - Limits discharge into the atmosphere from any affected facility any odorous emissions in excess of that resultant from using best available control technology.

FUTURE APPLICABLE REQUIREMENTS

The Strongwell Corporation – Highlands Division facility is considered an existing reinforced plastic composites production facility subject to the Maximum Achievable Control Technology (MACT) standards for reinforced plastic composites production, 40 CFR Part 63, Subpart WWWW. The facility must comply with all applicable requirements by April 21, 2006. The permit will be re-opened for inclusion of those requirements.

INAPPLICABLE REQUIREMENTS

New Source Performance Standard (NSPS) Requirements for Polymeric Coating of Supporting Substrates in 40 CFR Part 60, Subpart VVV, and 9 VAC 5-50-410, are not applicable based on

the following differences between the fiberglass reinforced plastic pultrusion process and the processes described in the Background Information Document (BID) for NSPS Subpart VVV:

- all coated materials discussed in the BID are polymers; the permittee's process utilizes monomeric styrene;

- the pultrusion and casting processes do not utilize solvents; the styrene monomer is liquid with physical properties sufficient for processing;

- there are no flashoff, drying or curing ovens associated with the process at the facility; they are unnecessary due to the fact that no solvents are used that need to be dried;

- the finished product is a structural component and completely rigid, not capable of being rewound and is totally inflexible as it comes off the production line, and;

- the fiberglass-reinforcing matrix is not a substrate to be coated or merely impregnated, it is a critical, supporting structure.

9 VAC 5-40-260 Standard for Particulate Matter is not applicable. According to 9 VAC 5-50-10D, the provisions of 9 VAC 5 Chapter 40, unless specified otherwise, shall apply to new and modified sources to the extent that those provisions thereof are more restrictive than 9 VAC 5 Chapter 50. Particulate emissions from the pultrusion and casting operations are not specifically limited in the permit because they are considered negligible as controlled by Best Available Control Technology (BACT) required in 9 VAC 5 Chapter 50. The permit contains conditions requiring control of particulate emissions from the pultrusion process and aggregate storage by fabric filtration, which is considered BACT. The permit contains a condition requiring control of particulate emissions from aggregate handling by wet suppression, which is considered BACT. The permit also includes conditions requiring proper operation and maintenance of BACT equipment and monitoring such use including, opacity limits, opacity observations and throughput limits, all of which maintain particulate emissions at levels less than the particulate matter emission standard contained in Rule 4-4. Therefore, the standard for particulate emissions in Rule 4-4, being the less restrictive, is not applicable.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation[1] (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
T-WC-1 and T-WC-2	Bulk resin storage tanks (2 tanks)	5-80-720 B.5.	VOC	6,768 gallon capacity, each
T-WC-3 and T-WC-4	Bulk resin storage tanks (2 tanks)	5-80-720 B.5.	VOC	10,000 gallon capacity, each
HC-1	York heating/cooling system, natural gas-fired	5-80-720 C.2.A.	CO	0.163 Million Btu/HR heat input
HC-2 and HC-3	York heating/cooling system, natural gas-fired	5-80-720 C.2.A.	CO	0.10 Million Btu/HR heat input, each
SH-1 through SH-36	Radiant space heaters, natural gas-fired	5-80-720 A.6	CO	0.075 Million Btu/HR heat input, each

[1]The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in the Bristol Herald Courier, Bristol, Virginia on March 1, 2005. EPA was sent a copy of the draft permit and notified of the public notice by electronic mail on February 25, 2005. The affected states, including Kentucky, North Carolina, Tennessee and West Virginia, were each sent a copy of the public notice by regular mail on February 25, 2005. All persons on the title V mailing list were sent a copy of the public notice by e-mail, fax or letter no later than March 1, 2005.
Public comments were accepted from March 1, 2005, through March 30, 2005. No comments were received from the EPA, the affected states or the public regarding the draft permit.

Attachment A

Strongwell Corporation - Highlands Division
Registration No. 11207

Casting Operations

Resin:
The maximum and average hourly resin consumption rates are 675 lb/hr and 450 lb/hr per station, respectively. For three casting stations, this equates to a maximum of 2025 lb/hr and an average of 1350 lb/hr. The annual resin consumption limit is the average hourly rate × 8760 hr/yr (5913 T/yr). Emission calculations are based on a styrene content of 45% and a VOC/styrene emission factor of 1.13% of the available styrene. This emission factor was obtained from a stack test at the Strongwell facility in San Jose, CA and includes any contribution from promoters and catalysts.

VOC:	2025 lb/hr × 45% × 1.13%	=	10.30 lb/hr
	5913 T/yr × 45% × 1.13%	=	30.07 T/yr

Mold Release:

Strongwell proposes to use naphtha (100% VOC) as their mold release agent at a maximum rate of 4.8 lb/hr per molding/casting area. Allowable emissions are based on 100% of the release agent volatilizing and all three stations in operation at the same time.

VOC:	4.8 lb/hr × 3	=	14.40 lb/hr
	14.40 lb/hr × 8760 hr/yr ÷ 2000 lb/T	=	63.07 T/yr

Total expected VOC emissions from the casting operation are: 24.7 lb/hr, 93.14 T/yr.

Pultrusion Operations

Styrene Resin:

2100 lb resin/hr × 0.0104 lb VOC/ lb resin	=	21.84 lb/hr
6450 T resin/yr × 0.0104 T VOC/T resin	=	67.08 T/yr

Phenolic Resin

312 lb/hr × 0.00243 lb VOC/lb resin	=	0.76 lb/hr
600 T/yr × 0.00243 T VOC/T resin	=	1.46 T/yr

PM Blend (100% VOC, 25% emitted, usage rates: 80 lb/hr, 50 T/yr)

80 lb/hr × 0.25	=	20.0 lb/hr
50 T/yr × 0.25	=	12.5 T/yr

1124 Solvent (18% VOC, usage rates: 20 lb/hr, 2.5 t/yr)

20 lb/hr × 0.18	=	3.6 lb/hr
2.5 T/yr × 0.18	=	0.45 T/yr

M1526 Inhibitor (3% VOC, usage rates: 2.0 lb/hr, 1.3 T/yr)

2.0 lb/hr × 0.03	=	0.06 lb/hr
1.3 T/yr × 0.03	=	0.04 T/yr

Silquest A-174 (100% VOC, usage rates: 10.5 lb/hr, 32.3 T/yr)
This material undergoes polymerization in the presence of peroxide catalysts, therefore very little is emitted. The material contains 0.2% methanol that is emitted as a VOC.

10.5 lb/hr × 0.002	=	0.02 lb/hr
32.3 T/yr × 0.002	=	0.06 T/yr

12% Cobalt (30% VOC, usage rates: 0.63 lb/hr, 0.07 ton/yr)

0.63 lb/hr × 0.3	=	0.19 lb/hr
0.07 T/yr × 0.3	=	0.02 T/yr

Esperox 570P (1% VOC, usage rates: 8.4 lb/hr, 25.8 tons/yr)
This organic peroxide is consumed in the process, undergoing chemical change.

8.4 lb/hr × 0.01	=	0.08 lb/hr
25.8 T/yr × 0.01	=	0.26 T/yr

t-Butyl Perbenzoate (100% VOC, 2% emitted, usage rates: 2.1 lb/hr, 6.5 T/yr)
This is an organic peroxide, which initiates polymerization of the resin. Although the material is potentially a VOC, it decomposes at relatively low temperatures and is largely consumed in the polymerization reaction. Estimate that 2% is emitted.

2.1 lb/hr × 0.02	=	0.04 lb/hr
6.5 T/yr × 0.02	=	0.13 T/yr

Lupersol DDM-9 (54% VOC, usage rates: 0.56 lb/hr, 0.1 T/yr)
The organic peroxides are changed chemically and not emitted as VOC. Only the solvent portion is emitted.

0.56 lb/hr × 0.54	=	0.3 lb/hr
0.1 T/yr × 0.54	=	0.05 T/yr

Dimethylaniline (100% VOC, usage rates: 0.04 lb/hr, 0.01 T/yr)

0.04 lb/hr × 1	=	0.04 lb/hr
0.01 T/yr × 1	=	0.01 T/yr

Total expected VOC emissions from pultrusion operations: 46.93 lb/hr, 82.06 T/yr.

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STATEMENT OF LEGAL AND FACTUAL BASIS

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Abingdon, Washington County, Virginia
Permit No. SWRO11207

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Engineer/Permit Contact:_____ Date: November 14, 2006

Air Permit Manager:_____ Date: November 14, 2006

Deputy Regional Director:_____ Date: November 14, 2006

FACILITY INFORMATION

Permittee
Strongwell Corporation
P. O. Box 580
Bristol, Virginia 24203-0580

Facility
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26770 Newbanks Road
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County-Plant ID No. 51-191-00165

SOURCE DESCRIPTION

NAICS Code: 326199 – All other plastics product manufacturing

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The casting process involves pouring a mixture of unsaturated polyester vapor-suppressed resin, sand, gravel, calcium carbonate and small amounts of catalyst and promoter into a mold containing fiberglass fabric reinforcement to produce a polymer concrete product. Emissions of VOC and HAP result from evaporation of monomers during the casting process. Emissions of PM result from aggregate handling.

The facility is a Title V major source of HAP (styrene and phenol) and VOC. The facility is located in an attainment area for all pollutants, and is a Prevention of Significant Deterioration (PSD) minor source. The facility is currently permitted under a minor New Source Review (NSR) permit issued on December 10, 2004, and a Title V operating permit with an expiration date of June 22, 2010.

The permittee has applied to incorporate all applicable requirements from 40 CFR Part 63, Subpart WWWW – National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production into the Title V operating permit.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was completed on July 11, 2005. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

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MC-2	VS-WC-4	Mixing and casting area consisting of 20 stations with various molds and hand tools	8,650 lb/hr resin mixture	To be determined	DC-WC-4	Particulate	December 10, 2004
Pultrusion Equipment							
PM-1 through PM-5 and PM-9	DC-1	Strongwell, 4 cavity model; produces fiber reinforced plastic products, 6 machines	300 lb/hr, each	Farr, size 20d cartridge dust collector	DC-WC-1	Particulate	December 10, 2004
PM-10	DC-2	Strongwell, 4 cavity model; produces fiber reinforced plastic products, 1 machine	300 lb/hr	Farr, size 20d cartridge dust collector	DC-WC-2	Particulate	December 10, 2004
Resin Mixing and Storage Equipment							
T-WC-1 and T-WC-2	-----	Bulk resin storage, 2 tanks	6,768 gallon capacity, each	-----	-----	-----	December 10, 2004
T-WC-3 and T-WC-4	-----	Bulk resin storage, 2 tanks	10,000 gallon capacity, each	-----	-----	-----	December 10, 2004
BT-1 through BT-3	-----	Resin blending, 3 tanks	1,000 gallon capacity, each	-----	-----	-----	December 10, 2004

EMISSIONS INVENTORY

Actual emission data is from the 2005 annual emission update. A copy of the annual emission update is attached. Emissions are summarized in the following tables:

2005 Actual Emissions

	2005 Criteria Pollutant Emission in Tons/Year				
Emission Unit	VOC	CO	SO_2	PM_{10}	NO_x
PM-1 through PM-5, PM-9 and PM-10	28.88	---	---	0.04	---
MC-1 and MC-2	2.52	---	---	0.02	---
SH-1 through SH-32, HC-1 through HC-3	---	---	---	0.01	0.14
Total	31.4	---	---	0.07	0.14

2005 Facility Hazardous Air Pollutant Emissions

Pollutant	2005 Hazardous Air Pollutant Emissions
Styrene	26.3 tons/yr

EMISSION UNIT APPLICABLE REQUIREMENTS INVOLVING SIGNIFICANT MODIFICATION - Pultrusion Equipment, PM-1 through PM-5, PM-9 and PM-10

Limitations

As an existing reinforced plastic composites production facility with no centrifugal casting or continuous lamination/casting operations, 9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to the pultrusion operation:

40 CFR 63.5805(a): Emission limitation for pultrusion in Table 3 and work practice standards for pultrusion of large parts in Table 4;

40 CFR 63.5830(b) – (e): Compliance options for existing pultrusion operations; and

40 CFR 63.5835(a): General requirements for compliance with the emission limitation for pultrusion in Table 3.

There are no add-on control devices at the facility for HAP emissions from pultrusion equipment. Therefore, the emissions capture and control option in 40 CFR 63.5830(a) is not included in the permit.

Monitoring

9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to the pultrusion operation:

40 CFR 63.5895(c) and (e): Monitoring and data collection requirements for resin use and wet area enclosures;

40 CFR 63.5900(a)(2) and (a)(4): Continuous compliance demonstration requirements.

Calculations demonstrating compliance with current emission limits for the pultrusion equipment are included in Attachment A.

Recordkeeping

9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to the pultrusion operation:

40 CFR 63.5895(c) and (e): Recordkeeping requirements for resin use and wet area enclosures; and

40 CFR 63.5915 and 5920: Recordkeeping requirements.

Testing

There are no new applicable testing requirements for the pultrusion equipment.

Reporting

9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to the pultrusion operation:

40 CFR 63.5905 and 5910: Notification and reporting requirements.

The initial notification required by 40 CFR 63.5905(a), Table 13, No. 1, was received by DEQ on

July 25, 2003. The notification of compliance status required by 40 CFR 63.5905(a), Table 13, No. 4, applies.

EMISSION UNIT APPLICABLE REQUIREMENTS – Casting Equipment, MC-1, MC-2, and AS-1 through AS-5

The casting process at the facility meets the definition of polymer casting indicated in 40 CFR 63.5935 of Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. Composite materials are poured into open molds and cured. The materials are not rolled out or worked while in the mold, except for smoothing or vibrating to remove bubbles. 40 CFR 63.5790(c) indicates polymer casting is excluded from any requirements in the subpart. Therefore, while the casting operation at the facility is subject to Subpart WWWW, the process is excluded from any requirements in it.

The permittee has completed the notification requirements in Condition 17 of the minor NSR permit issued on December 10, 2004. Therefore, the corresponding requirements in Conditions III.E.1 and III.E.2 of the Title V operating permit no longer apply and have been removed.

Calculations demonstrating compliance with current emission limits for the casting equipment are included in Attachment A.

EMISSION UNIT APPLICABLE REQUIREMENTS INVOLVING SIGNIFICANT MODIFICATION – Resin Mixing and Resin Storage Equipment, T-WC-1 through T-WC-4, and BT-1 through BT-3

Limitations

As an existing reinforced plastic composites production facility with no centrifugal casting or continuous lamination/casting operations, 9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to the resin mixing and storage operations:

> 40 CFR 63.5835(a): General compliance requirements and applicable work practice standards in Table 4 of the subpart.

Monitoring and Recordkeeping

9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to the resin mixing and storage operations:

> 40 CFR 63.5900(a)(4): Continuous compliance demonstration requirements for work practice standards for existing mixing, storage and cleaning operations; and

40 CFR 63.5915 and 5920: Recordkeeping requirements.

Testing

There are no new applicable testing requirements for the resin mixing and storage operations.

Reporting

9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to the resin mixing and storage operations:

40 CFR 63.5905 and 5910: Notification and reporting requirements.

EMISSION UNIT APPLICABLE REQUIREMENTS INVOLVING SIGNIFICANT MODIFICATION - Facility-Wide Requirements

Limitations

As an existing reinforced plastic composites production facility with no centrifugal casting or continuous lamination/casting operations, 9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to cleaning operations for reinforced plastic composites production equipment subject to Subpart WWWW:

40 CFR 63.5805(a): Work practice standards for cleaning in Table 4 of the subpart;

40 CFR 63.5835(a): General requirements for compliance with the work practice standard for cleaning in Table 4 of the subpart.

Monitoring and Recordkeeping

9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to cleaning operations for reinforced plastic composites production equipment subject to Subpart WWWW:

40 CFR 63.5900(a)(4): Compliance with the work practice standards in Table 4 is demonstrated by performing the work practice required for the operation; and.

40 CFR 63.5915(d) and 5920: Recordkeeping requirements.

The permittee will maintain records of the following:

A copy of each notification and report submitted to comply with the permit; and

A certified statement of compliance with the work practice requirements.

Testing

There are no new testing requirements applicable to the facility.

Reporting

9 VAC 5-60-100, Subpart WWWW of Virginia air pollution regulations and the following provisions of 40 CFR Part 63, Subpart WWWW-National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, apply to cleaning operations for reinforced plastic composites production equipment subject to Subpart WWWW:

40 CFR 63.5905 and 5910: Notification and reporting requirements.

The initial notification required by 40 CFR 63.5905(a), Table 13, No. 1, was received by DEQ on July 25, 2003. The notification of compliance status required by 40 CFR 63.5905(a), Table 13, No. 4, applies.

INSIGNIFICANT EMISSION UNITS

Bulk resin storage tanks T-WC-1 through T-WC-4 are listed as insignificant emission units in the renewal permit issued June 23, 2005. Since MACT Subpart WWWW contains requirements applicable to resin storage, those tanks have been removed from the Insignificant Emission Units table and placed in the Emission Unit and Control Device Identification table.

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application for significant modification are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft significant modification to the permit was placed in the Washington County News, Abingdon, Virginia on August 23, 2006. Copies of the draft permit and public notice were sent to the EPA by electronic mail on August 16, 2006. A copy of the public notice was sent to each of the affected states, including Kentucky, North Carolina, Tennessee and West Virginia by postal mail on August 17, 2006. A copy of the public notice was sent to each person on the Title V mailing list by electronic mail, postal mail or facsimile no later than August 24, 2006. Public comments were accepted from August 24, 2006, through September 22, 2006. No comments were received from the EPA, the affected states or the public regarding the draft permit.

Attachment A

Strongwell Corporation - Highlands Division
Registration No. 11207

Casting Operations

Resin:
The maximum and average hourly resin consumption rates are 675 lb/hr and 450 lb/hr per station, respectively. For three casting stations, this equates to a maximum of 2025 lb/hr and an average of 1350 lb/hr. The annual resin consumption limit is the average hourly rate × 8760 hr/yr (5913 T/yr). Emission calculations are based on a styrene content of 45% and a VOC/styrene emission factor of 1.13% of the available styrene. This emission factor was obtained from a stack test at the Strongwell facility in San Jose, CA and includes any contribution from promoters and catalysts.

VOC:	2025 lb/hr × 45% × 1.13%	=	10.30 lb/hr
	5913 T/yr × 45% × 1.13%	=	30.07 T/yr

Mold Release:

Strongwell proposes to use naphtha (100% VOC) as their mold release agent at a maximum rate of 4.8 lb/hr per molding/casting area. Allowable emissions are based on 100% of the release agent volatilizing and all three stations in operation at the same time.

VOC:	4.8 lb/hr × 3	=	14.40 lb/hr
	14.40 lb/hr × 8760 hr/yr ÷ 2000 lb/T	=	63.07 T/yr

Total expected VOC emissions from the casting operation are: 24.7 lb/hr, 93.14 T/yr.

Pultrusion Operations

Styrene Resin:

2100 lb resin/hr × 0.0104 lb VOC/ lb resin	=	21.84 lb/hr
6450 T resin/yr × 0.0104 T VOC/T resin	=	67.08 T/yr

Phenolic Resin

312 lb/hr × 0.00243 lb VOC/lb resin	=	0.76 lb/hr
600 T/yr × 0.00243 T VOC/T resin	=	1.46 T/yr

PM Blend (100% VOC, 25% emitted, usage rates: 80 lb/hr, 50 T/yr)

80 lb/hr × 0.25	=	20.0 lb/hr
50 T/yr × 0.25	=	12.5 T/yr

1124 Solvent (18% VOC, usage rates: 20 lb/hr, 2.5 t/yr)

20 lb/hr × 0.18	=	3.6 lb/hr
2.5 T/yr × 0.18	=	0.45 T/yr

M1526 Inhibitor (3% VOC, usage rates: 2.0 lb/hr, 1.3 T/yr)

2.0 lb/hr × 0.03	=	0.06 lb/hr
1.3 T/yr × 0.03	=	0.04 T/yr

Silquest A-174 (100% VOC, usage rates: 10.5 lb/hr, 32.3 T/yr)
This material undergoes polymerization in the presence of peroxide catalysts, therefore very little is emitted. The material contains 0.2% methanol that is emitted as a VOC.

10.5 lb/hr × 0.002	=	0.02 lb/hr
32.3 T/yr × 0.002	=	0.06 T/yr

12% Cobalt (30% VOC, usage rates: 0.63 lb/hr, 0.07 ton/yr)

0.63 lb/hr × 0.3	=	0.19 lb/hr
0.07 T/yr × 0.3	=	0.02 T/yr

Esperox 570P (1% VOC, usage rates: 8.4 lb/hr, 25.8 tons/yr)
This organic peroxide is consumed in the process, undergoing chemical change.

8.4 lb/hr × 0.01	=	0.08 lb/hr
25.8 T/yr × 0.01	=	0.26 T/yr

t-Butyl Perbenzoate (100% VOC, 2% emitted, usage rates: 2.1 lb/hr, 6.5 T/yr)
This is an organic peroxide, which initiates polymerization of the resin. Although the material is potentially a VOC, it decomposes at relatively low temperatures and is largely consumed in the polymerization reaction. Estimate that 2% is emitted.

2.1 lb/hr × 0.02	=	0.04 lb/hr
6.5 T/yr × 0.02	=	0.13 T/yr

Lupersol DDM-9 (54% VOC, usage rates: 0.56 lb/hr, 0.1 T/yr)
The organic peroxides are changed chemically and not emitted as VOC. Only the solvent portion is emitted.

0.56 lb/hr × 0.54	=	0.3 lb/hr
0.1 T/yr × 0.54	=	0.05 T/yr

Dimethylaniline (100% VOC, usage rates: 0.04 lb/hr, 0.01 T/yr)

0.04 lb/hr × 1	=	0.04 lb/hr
0.01 T/yr × 1	=	0.01 T/yr

Total expected VOC emissions from pultrusion operations: 46.93 lb/hr, 82.06 T/yr.